3-Basic Agile Concepts

Module TLO: Given a contractor's development approach student will recognize alignment with agile principles.

Subtopics

- 1-The agile methods landscape
- 2-Common agile concepts and practices
- 3-Differences between traditional development and Agile development
- 4-Agile Myth Busting

ELO

- ELO 4.1 – Recognize the common characteristics of an Agile Environment (BL 1)
- ELO 4.2 - Recognize what a program office would see in an Agile program vs a traditional one (BL 1)
- ELO 4.3 – Recognize common misconceptions associated with applying Agile methods (BL 1)

ELO Mapping to Sub-topics

Subtopic	ELO(s)
1-The agile methods landscape	ELO 4.1
2-Common agile concepts and practices	ELO 4.1
3-Differences between traditional development and Agile development	ELO 4.1
4-Agile Mythbusting	ELO 4.1 , 4.2

Subtopic 1: The agile methods landscape

- A working definition of Agile
  - An iterative and incremental(evolutionary) approach to software development which is performed in a highly collaborative manner by self-organizing teams within an effective governance framework with “just enough” ceremony that produces high quality software in a cost effective and timely manner which meets the changing needs of its stakeholders. [Ambler 2013]
- Lean Thinking and Engineering Principles work in concert to deliver agility
  - Take an economic view
  - Apply systems thinking
  - Assume variability; preserve options
  - Build incrementally with fast, integrated learning cycles
  - Base milestones on objective evaluation of working systems
  - Visualize and limit Work in Process (WIP), reduce batch sizes, and manage queue lengths (apply concepts of product development flow)
  - Apply cadence; synchronize with cross-domain planning
  - Unlock the intrinsic motivation of knowledge workers
  - Decentralize decision-making

Subtopic 1: The agile methods landscape (2)

- Methodologies considered Agile
  - Scrum
  - XP
  - Crystal
  - TDD
  - DSDM
  - KANBAN
  - Disciplined Agile Delivery
  - Scaled Agile Framework
- Assessments:
  - Multiple Choice: Identify a key reason why Lean Thinking and Agile are complementary
  - Multiple Choice: Identify key definition of SCRUM
  - Multiple choice: Identify the purpose of the Scaled Agile Framework

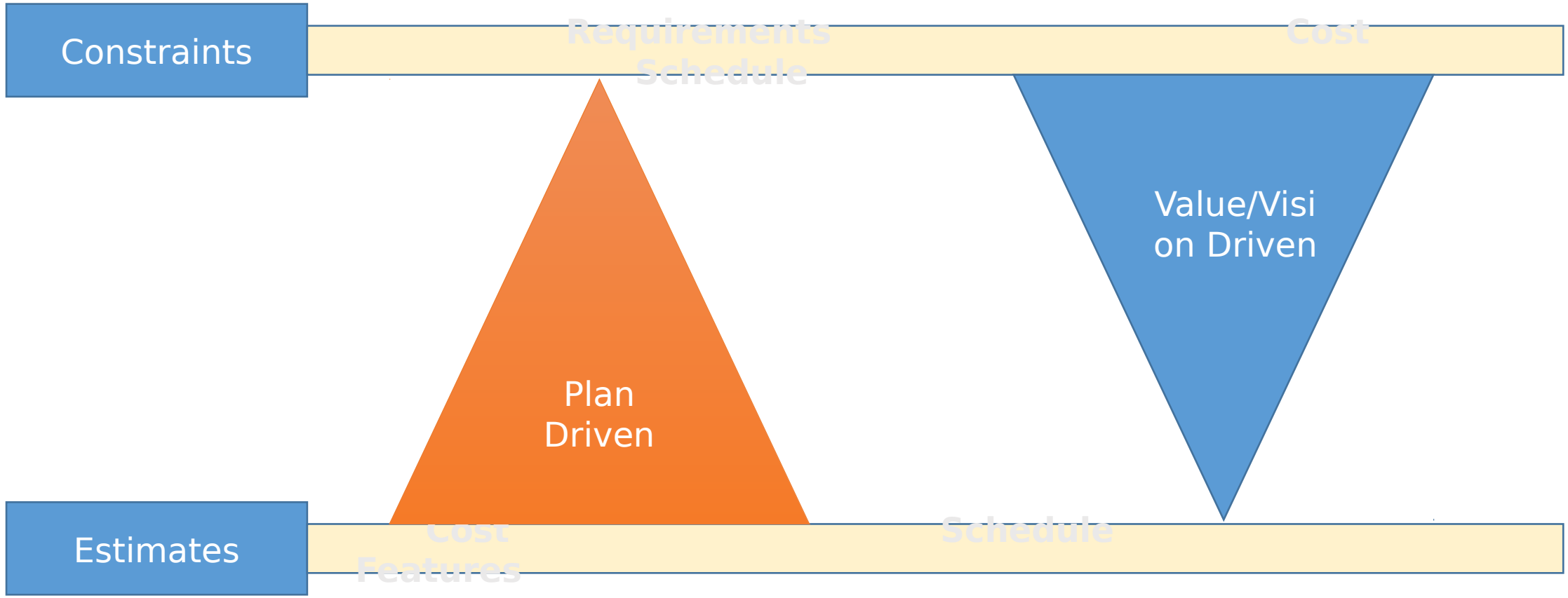
Subtopic 2: Common agile concepts and practices

- Agile is a team approach
- Observable characteristics of Agile Implementations
  - Incremental and iterative
  - Collaborative
  - Loosely coupled Architecture
  - Dedicated
  - Time-boxed
- Assessments:
  - Given a list of possible agile characteristics, select all that our agile (ELO 4.1)… isn’t this more of a Module 2 question?
  - Multiple choice – Choose which roles participate in a agile development effort (ELO 4.1)
  - Multiple choice – identify the correct definition of iterative and incremental (ELO 4.1)… this feels more like a Module 3 question

Subtopic 3: Differences between traditional development and Agile development

- Both Waterfall and Agile Development Methods have Risks
- The Traditional approach is hardware centric
  - Classic Engineering V (Assuming a Hardware-centric system)
  - Difference between Model 1 and Model 2 of DOD5000
- Waterfall and Agile both use the same development basic building blocks – Analyze, design, build, test, and deploy.
  - Step through how waterfall and agile processes these differently – waterfall, incremental, agile
- Describe the Agile Approach
  - Scrum Example (Key elements, framework, terms, artifacts, ceremonies)

Comparison between Waterfall and Agile Process



Subtopic 3: Differences between traditional development and Agile development

- There are times when Agile does not apply
  - Traditional approach situations
  - Agile approach works well situations
  - Show where the best of Agile counters the worst of traditional

- Assessments:
  - Differentiate between traditional and Agile development risks (4.2)
  - Recognize the differences between traditional development and agile development with regard to the development life-cycle (4.2)
  - Select from a list where agile development may not apply (4.2)… here we are repeating from Module 2 – can we make the list a little more challenging to think through so that the learner is progressing forward?

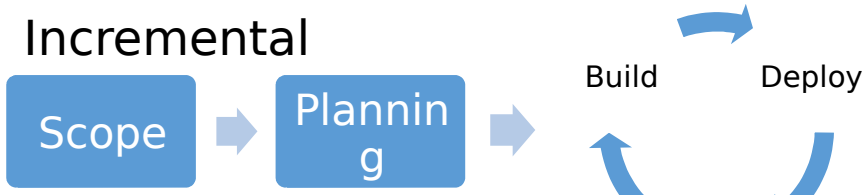
Subtopic: 4-Agile Myth busting

- Discuss common agile myths
  - Agile is a fad
  - Agile teams don’t document
  - Agile is “wild west” programming
  - Agile only works in co-located environments
  - Agile is just spiral renamed
  - Agile won’t work in DoD or Government environments
  - Agile only works on small projects
  - You can’t used EVM on Agile Software Developments
- Assessment
  - Provide 3 MultChoice assessments that as student to chose correct reason an agile myth is not true (4.3)

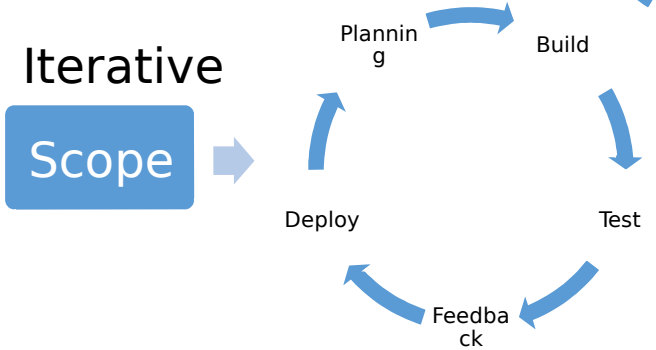
Agile/Hybrid/Waterfall Overview

Sequential

Incremental



Iterative



Agile